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Impact of anxiety and tourists' habits on their intention to vacation during and after the COVID-19 pandemic: Treatment effect analysis

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ABSTRACT

This research aims to examine how tourists' anxiety, fear, and travel habits influenced their travel intentions to Switzerland after the first wave of the COVID-19 pandemic and the relaxation of containment measures. This study uses the endogenous treatment effect method to analyze the impact of travel habits and fear on travel intentions, surveying 1042 travelers from Western Europe, India, the United States, and Switzerland and applying the two-stage least squares (2SLS) technique. The findings indicate that non-anxious tourists visiting rural areas and usually on short to medium-duration vacations were highly willing to travel. Anxious tourists who had previously traveled to ski resorts also expressed willingness to travel after the COVID-19 pandemic. In addition, non-anxious tourists typically making individual travel arrangements had greater intent to travel. This analysis suggests that positive past travel experiences increase the desire to travel despite negative factors like health risks and social distancing constraints, and the primary motivation for travel is to engage in outdoor activities as a response to confinement These results are important for travel agencies as they can leverage them to target and encourage tourists with appropriate offers and targeted promotional campaigns.

Contribution/Originality: The originality of this research lies in its examination of the impact of anxiety, fear, and travel habits on travel intentions to Switzerland after the first wave of COVID-19 using the endogenous treatment effect method. The study highlights that past positive travel experiences and outdoor activities motivate travel despite pandemic-related health risks, which has practical implications for targeted marketing strategies by travel agencies.

1. INTRODUCTION AND LITERATURE REVIEW

1.1. Introduction

In 2020, the emergence of the COVID-19 pandemic caused unprecedented public health crises that resulted in shutdowns from March onwards. This pandemic had a significant impact on society and the economy, resulting in changes in work arrangements and an increased trend toward remote working for some workers who utilized telecommuting. Additionally, the pandemic had irreversible effects on travel behavior as it brought national and international mobility to a halt. The United Nations Secretary-General, António Guterres, also acknowledged this

impact: "Tourism is one of the most important economic sectors globally. It employs 1 in 10 people worldwide and provides a living for hundreds of millions more."

A joint report by the United Nations Conference on Trade and Development (UNCTAD) and the UN World Tourism Organization (UNWTO) revealed that the COVID-19 pandemic may have led to a loss of over $4 trillion in global GDP between 2020 and 2021. However, the development of COVID-19 vaccines, including the Pfizer/BioNTech vaccine, authorized by the World Health Organization on December 31, 2020, and the subsequent vaccination campaigns in various countries offer hope of ending the pandemic worldwide. The UNWTO does not expect the tourism sector to return to normal before 2023. It is, therefore, important to analyze the travel intentions of tourists, as this will allow estimates regarding a meaningful recovery of economic activity in international tourism to be revised.

Alegre, Mateo, and Pou (2009) and Boto-García (2022) presented evidence that participation in tourism activities may show habit formation or state dependence, a concept developed by Heckman (1991), which assumes that past travel experiences determine individuals' future travel behavior. Pollak (1970) formulated a consumer behavior model that relied on habit formation and provided evidence that an individual's present preferences can be influenced by their previous consumption patterns. Based on the early consumer habit formation model (Pollak, 1970) and the concept of state dependence (Heckman, 1991), Boto-García (2022) showed that participation in the previous month increases consumers' propensity to make a tourist trip in the following period. Using Spanish data, Alegre et al. (2009) showed that the two most important determinants of the decision to consume travel and the intensity of that consumption are income and habit formation, expressed as travel consumption in the previous period. However, even if tourism activities persist over time, the COVID-19 pandemic may have influenced tourists' attitudes towards travel during the outbreak due to various uncertainties related to travel and negative emotions, including fear of contracting the virus and border closures.

The marketing literature has mainly focused on consumer behaviors and purchase intentions when discussing attitudes. As Kotler, Dubois, and Manceau (2003) stated, "An attitude summarizes evaluations (positive or negative), emotional reactions, and predispositions to act toward an object or idea." Therefore, based on this definition, tourists' habits, such as their choice of destination, length of stay, and type of tourist activities, could change depending on the circumstances and challenges presented by the global health situation. An increasing amount of literature has emerged that examines tourists' travel intentions after the end of the COVID-19 pandemic (Ahmed, Hossain, Siddique, & Jobe, 2021; Bratić et al., 2021; Chebli & Said, 2020; Chua, Al-Ansi, Lee, & Han, 2021; Rahman, Gazi, Bhuiyan, & Rahaman, 2021; Wachyuni & Kusumaningrum, 2020). The impact of the pandemic on tourism has resulted, for instance, in a change in tourists' preferences towards shorter stays (Wachyuni & Kusumaningrum, 2020). Some studies have concluded that fear of infection has led tourists to prefer destinations that are closer to home or are short-haul trips (Bratić et al., 2021; Sung, Kim, & Kwon, 2020; Wachyuni & Kusumaningrum, 2020). However, other studies have suggested that tourists' destination choices depend on a country's response to the COVID-19 pandemic. According to Chua et al. (2021), tourists' travel intentions after the pandemic are influenced by their preventive health behaviors and attachment to their destination. The growing body of literature on tourists' post-COVID travel intentions suggests that travel behaviors are influenced by several factors, such as habits and psychological factors like anxiety. Studies by Wachyuni and Kusumaningrum (2020) and Bratić et al. (2021) have suggested that while anxiety may play a role in travel decision-making, other factors related to travel intention outweigh it. The media also plays a significant role in shaping tourists' future travel intentions after the pandemic, as demonstrated by Bhati, Mohammadi, Agarwal, Kamble, and Donough-Tan (2021), who found that mass media and social networks can impact and manipulate tourists' travel behaviors. The negative impact of health risk perception on travel intention during the pandemic was addressed by Su et al. (2022), who concluded that health risk perception is indirectly influenced by information about the pandemic and can affect tourists' future travel plans through their health self-efficacy and attitude towards travel. Overall, these findings highlight the complexity of factors influencing

tourists' travel intentions in the post-COVID era. Some previous studies that examined the influence of habits on travel choices using micro-data failed to take into account important factors such as the type of trip, its duration, and the characteristics of the destination.

This study aims to address these limitations and contribute to the field by examining these specific travel attributes in relation to the impact of habit formation on travel intentions. The analysis will employ a treatment effect method to compare the effects of habit formation on travel intentions across different levels of habit, with a control group that did not engage in this type of travel, all within the context of the COVID-19 pandemic.

1.2. Literature Review

In recent studies, researchers have examined how fear and anxiety surrounding the COVID-19 pandemic have affected people's willingness to travel. Specifically, Luo and Lam (2020) studied the influence of COVID-19 fear, travel anxiety, and risk attitude on travel intentions to "travel bubble" destinations. Such destinations were travel programs developed by travel agencies that allowed people to travel to neighboring countries without having to undergo compulsory lockdown measures. The results indicated a negative influence of COVID-19 fear, as well as travel anxiety and travel risk attitude, on travel intention. In addition, travel-related anxiety and risk attitude mediated the indirect effect of fear of COVID-19 on the intention to travel.

Abou-Shouk, Zoair, and Abulenein (2022) examined the impact of COVID-19-related fear and anxiety on individuals' desire to travel, as well as the influence of protective measures implemented by the United Arab Emirates (UAE) and Egypt on travel intentions. The researchers used an Internet-based survey that collected data from a convenience sample of randomly selected respondents in the two countries and analyzed the results using a structural equation model. The study found that the perception of the protection measures taken by the UAE and Egypt was an important predictor of the travel intentions of the individuals concerned. Gastaldello, Livat, and Rossetto (2022) examined the influence of COVID-19-related fear and anxiety on enotourism travel intentions after the first lockdown.

They also considered the effects of solidarity and situation, in addition to the importance of personal engagement with the product. According to their findings, the pandemic led to changes in wine-related travel patterns, and wine tourism intentions increased after the lockdown. Interestingly, the study found that fear of contagion did not have a significant impact on wine tourism intentions. In contrast, situational involvement, such as spending time with wine during the lockdown, and willingness to support local wine producers had a positive effect.

Handler and Kawaminami's (2023) study analyzed the impact of worry on Japanese travelers' intentions to visit thermal pools during the COVID-19 pandemic. The authors identified three groups of visitors based on their self-reported perception of threat severity, infectiousness, the effectiveness of the response, self-efficacy, perceived crowding, and attitude: worried visitors, carefree visitors, and confident visitors. The study suggests various management strategies for the different visitor segments, including reducing the perception of risk for worried visitors, motivating confident visitors with external incentives, and encouraging carefree visitors by offering vouchers. Akhrani et al. (2022) conducted a study on the travel intentions of tourists in Indonesia and Taiwan during the pandemic by analyzing various factors, such as the risk perception of COVID-19, fear of COVID-19, perception of travel risk, vaccination attitude, and travel fear.

The study included a total of 641 respondents from both countries, and the data were analyzed using multiple regression and simple linear regression. The results showed that in Indonesia, all the factors mentioned above contributed to travel intentions, while in Taiwan, fear of COVID-19 failed to have any effect on travel intentions, and the model was instead formed by risk perception of COVID-19, perceived travel risk, attitude toward the vaccine, and fear of travel.

Handler and Tan (2022) conducted a market research study to explore the attitudes and feelings of Japanese traveler segments concerning national travel experiences during the pandemic. They identified six behavioral

dimensions, which included COVID-19 uncertainty and financial effects, using a factor analysis of 1,353 questionnaires. The K-means analysis of the clustering distinguished three tourism clusters: confident cross-border travelers, anxious cross-border travelers, and social cross-border travelers, each characterized by unique attitudes and socio-demographic characteristics. The authors proposed various strategies to cater to the unique needs of each travel segment. For anxious travelers, they suggest offering tour packages with minimal face-to-face contact. Confident travelers, on the other hand, can be incentivized through travel subsidies from national campaigns. For social travelers, conventional marketing campaigns may be sufficient to encourage them to travel domestically during the pandemic.

In summary, the previous literature suggests that travel intentions are negatively influenced by fear and anxiety, whereas perceived safety measures and situational awareness have a positive impact. Moreover, market segment-based management strategies, such as personalized travel packages and incentives, have been recommended to boost travel intentions.

2. METHODOLOGY

2.1. Research Problem

Recent research has argued that the travel habits of tourists have been impacted by the emergence of COVID-19 (Chebli & Said, 2020; Ertaş & Kırlar-Can, 2022; Rahman et al., 2021; Su et al., 2022). These results show that the perception of risk is a factor affecting travel behavior and that this perception depends on several factors, such as the socio-demographic characteristics of the tourist (Zhan, Zeng, Morrison, Liang, & Coca-Stefaniak, 2022) and their travel habits in terms of past experience (Karl, Kock, Ritchie, & Gauss, 2021). The objective of the current study is to assess how travel behaviors have influenced individuals' willingness to engage in leisure travel following the COVID-19 pandemic. It is believed that travel habits will induce tourists to maintain their travel behavior even if there are factors that favor their intentions to behave differently (Neal, Wood, & Quinn, 2006). These habits are the frequency of travel to preferred places, the choice of accommodations, the season of stay, the duration, and the type of holiday. Figure 1 illustrates the conceptual model
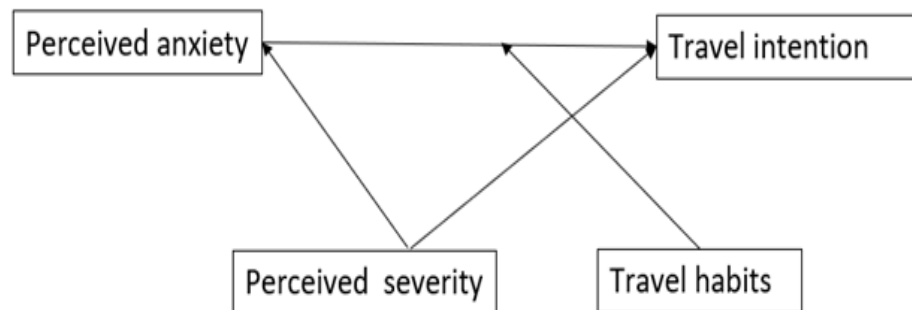

Figure 1. The conceptual model.

Şengel et al. (2023) found that travel intention varies with the level of anxiety induced by COVID-19. Similarly, Luo and Lam (2020) found a positive correlation between COVID-19 fear and travel anxiety, as well as a negative correlation between COVID-19 fear and travel intention. The above model incorporates travel behaviors to assess how previous actions may impact the desire to travel after the pandemic; in this conceptual model, the link between the variable travel intention and the degree of anxiety is endogenous, given the existence of an unobservable factor that simultaneously affects travel intention and anxiety. According to Banerjee and Basu (2021), this is a problem of endogeneity due to the observable confounders.

2.2. Research Hypotheses

Based on previous studies that showed that habits have an impact on travel intention (Havlíčková & Zámečník, 2020; Turnšek et al., 2020), we formulated the following hypotheses:

- *Hypothesis 1: Travel intention following the COVID-19 pandemic is influenced by past travel location habits.*
- *Hypothesis 2: Travel intention following the COVID-19 pandemic is influenced by past travel purpose habits.*
- *Hypothesis 3: Travel intention following the COVID-19 pandemic is influenced by past travel accommodation habits.*
- *Hypothesis 4: Travel intention following the COVID-19 pandemic is influenced by past travel duration habits in specific areas.*

2.3. Database

This study examines how travel patterns have affected people's willingness to engage in leisure travel after the COVID-19 pandemic. Data were collected through an online survey conducted by the Institute of Tourism (ITO) of the University of Applied Sciences and Arts of Western Switzerland Valais-Wallis from March to May 2020, using a quota-based sampling strategy to ensure representativeness of countries of residence. Demographic information was collected from existing census databases, and socio-demographic quotas were supplied by Cloud Research, which recruits participants from a pre-established database on the characteristics of international tourists. Survey respondents were tourists from Western European countries, India, and the United States, and the distribution of respondents by country of residence is presented in Table 1.

Table 1. Respondent repartition by country.

Residence countries	Frequency	Percent
Germany	95	9.1
Belgium	47	4.5
Spain	88	8.4
USA	88	8.4
France	104	10
India	79	7.6
Italy	88	8.4
Netherlands	49	4.7
UK	94	9
Switzerland	310	29.8
Total	1042	100

Table 1 provides the number and percentage of travelers from different countries who participated in the study conducted by the Vallais-Wallis Tourism Institute. The study includes 1042 travelers from Western Europe, India, the United States, and Switzerland. The table shows that Switzerland had the highest number of participants with 310 travelers, which represents 29.8% of the total sample. Germany, the United Kingdom, France, and Spain also had a significant representation in the study, each with over 8% of the total sample. On the other hand, countries like Belgium, the Netherlands, and India had a lower percentage of participants, each with less than 8% of the total sample.

The survey also gathered data on tourists' travel habits, including the location of their vacations, destination preferences, and types of accommodations used, which allows for an evaluation of the pandemic's influence on the desire to take a vacation. Following the exclusion of individuals with missing values on the habit variables and the desire to vacation variable, the sample size was reduced to 1,042 individuals.

2.4. Descriptive Statistics

Table 2 presents the descriptive statistics and measurement scales for the main variables used in this study. On average, respondents reported occasional visits to cities, beaches, and rural areas, but few to ski resorts. The average

age range of respondents was between 36 and 45 years old, and most had completed a bachelor's degree. The average monthly income reported by participants was $3,500.

Table 2. Descriptive statistics.

Habits	N	Minimum	Maximum	Mean	Std. deviation
City habits 1= Never. 5= Very often	1042	1	5	3.26	1.147
Ski habits 1= Never. 5= Very often	1042	1	5	2.1	1.208
Beach habits 1= Never. 5= Very often	1042	1	5	3.21	1.304
Rural area habits 1= Never. 5= Very often	1042	1	5	2.94	1.153
Age 1= - Than 18 ; 2= 18–25 ; 3= 26–35 ; …; 9= 76 and +	1042	1	7	3.7	1.735
Sex 0=male ; 1= female	1042	0	1	0.54	0.498
Education 1= Compulsory school; 2= High school; 3= Bachelor; 4= Master; 5= Doctorate	1042	1	5	2.73	1.082
Income 1= 900 € or less ; 2= From 901 to 1800 € ; 3= from 1801 à 2700 € ;…; 9= + 7200 € ;	1042	0	9	4.1353	2.592
Habits motif vacancies 1= Never 2= Only once 3= More than once	1042	1	3	2.2495	0.673
Habits motif parents 1= Never 2= Only once 3= More than once	1042	1	3	2.1075	0.875
Habitude motif professional 1= Never 2= Only once 3= More than once	1042	1	3	1.5096	0.798
Switzerland habits 0= Never visit 1 = Visit	1042	0	1	0.3138	0.465
Germany habits 0= Never visit 1 = Visit	1042	0	1	0.2649	0.442
France habits 0= Never visit 1 = Visit	1042	0	1	0.2889	0.454
Italy habits 0= Never visit 1 = Visit	1042	0	1	0.2716	0.445
UK habits 0= Never visit 1 = Visit	1042	0	1	0.2169	0.413
Other World habits 0= Never visit 1 = Visit	1042	0	1	0.2236	0.417
Hotel habits 1= Never 2= Only once 3= More than once	1042	1	3	2.1862	0.863
Para hotel habits 1= Never 2= Only once 3= More than once	1042	1	3	1.5182	0.764
Parent habits 1= Never 2= Only once 3= More than once	1042	1	3	1.7812	0.852
Habits duration 1–3 1= Never 2= Only once 3= More than once	1042	1	3	1.9299	0.887
Habits duration 4–7 1= Never 2= Only once 3= More than once	1042	1	3	1.9146	0.857
Habits duration 8–30 1= Never 2= Only once 3= More than once	1042	1	3	1.594	0.772
Habits duration more than 30 1= Never 2= Only once 3= More than once	1042	1	3	1.0797	0.3512
Summer habits 1= Never 2= Only once 3= More than once	1042	1	3	2.4328	0.7307
Winter habits 1= Never 2= Only once 3= More than once	1042	1	3	2.0662	0.8502
Travel intention From 0 to 100	1042	0	100	48.27	34.326

2.5. Data Analysis Technique: Exogenous Treatment Effect Model

To assess the impact of travel patterns on post-pandemic travel intentions, the treatment effect technique is most appropriate. This method assesses the effect of multiple treatments on an outcome variable (Cattaneo, Drukker, &